

**Geographic Information Systems
Support Annex
Colorado State Emergency Operations Plan**

Lead Agency: Department of Local Affairs

Supporting Departments/Agencies: Agriculture, Education, Public Health and Environment, Natural Resources, Public Safety, State, Transportation, Private Sector, and Professional Associations.

I. PURPOSE

- A. During the planning stage, Geographic Information Systems (GIS) can provide a range of information, including data on hazard areas (e.g., flood zones, buildings), and concentrations of special needs populations. In thunderstorm planning, for example, emergency managers can use GIS to identify areas of the city most vulnerable to storm-related damage.
- B. During emergencies, GIS staff can provide data and analysis to the Office of the Governor, State and local agencies and staff to support decision-making, and to emergency responders to help them assess an emergency in its initial phase. Informational maps are also created for public and private agencies in the State's Emergency Operations Center (SEOC). GIS can help provide information on population, buildings and infrastructure in affected areas, determine optimal restricted zones, and identify resources for sheltering, among other data.
- C. After an emergency, GIS can help recovery workers make decisions about the priority order for demolition, plan reconstruction of an area, and determine which property owners qualify for grants or loan programs, among other recovery-related issues.

II. SITUATION

- A. Any local disaster or emergency can rapidly expand beyond the capabilities of the response community resulting in a multi-jurisdictional, state regional, or statewide disaster or emergency. This would require the deployment of additional response assets, long-term planning operations to take place, and a coordinated overall situational picture of the event and response activities.

B. ASSUMPTIONS

- 1. GIS data is available at the state, local, or federal level.

2. Data is transferable between the federal government and state government, state agencies, and local jurisdictions.
3. Sufficient computer backup systems are available.

III. CONCEPT OF OPERATIONS

A. Overview

GIS support provides key data to decision-makers for current and future operations.

B. Operations

Upon notification of the activation of the SEOC, the GIS Team will:

1. Be operational within two hours. This will include having all appropriate systems operational, making contact with the incident / jurisdiction GIS team, and being prepared to provide the first graphic product (either electronically or in paper) within one hour.
2. Work with the PIO for appropriately approved graphic products to be disseminated to the media.
3. At regularly scheduled intervals, provide designated local, state, federal entities with graphical products.
4. Graphical products should contain, but not limited to geographical information on manmade structures, weather conditions, plume modeling predictions, population information, annotations of key locations, etc. Depending upon the purpose of the product, some information may be included or excluded.
5. As part of the post incident activities, provide DEM with a copy of all products used during the incident (response and recovery) as part of a historical record to be include in the after action report.
6. Provide, on request, analysis or relevant geographic information such as the population impacted by an incident or closest facilities to an incident or other point of interest
7. Integrate data from field and local sources including dynamic information regarding the status of the incident and response to it.

This new data will be visible to the response staff through the SEOC media system and/or integrated into the web-based viewer available to the response community.

8. Make the State's repository of data available to the response community through the *CO Common Operational Picture*, the State's web-based viewer of geospatial data or through download.

IV. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITY

- A. The State GIS Coordinator (Department of Local Affairs) will be the lead individual.
 1. Responsible for establishing a common operating picture infrastructure for state-level GIS activities.
 2. This infrastructure will involve identifying interoperable software packages for the sharing of information, security protocols to protect sensitive information, standardizing products for public and non-public release, etc.
 3. Upon activation of the SEOC, must be capable of simultaneously supporting both current and future (48-72 hours) operations.
 4. Work with local jurisdictions to establish the protocols for sharing of data between state and local entities.
- B. Department of Agriculture
 1. Provide epidemiological data related to food and animal diseases.
 2. Provide data related to locations of food or animal operations and support the maintenance of such data.
 3. Provide information on areas of quarantine or other restrictions related to agricultural operations.
- C. Department of Education

Will maintain and make available a database of all public educational institutions licensed by the State.
- D. Department of Natural Resources

1. Provide information on natural hazards including geologic hazards, flood hazards and risk from and to oil and mineral activities as well as boundaries of state owned land and state parks.
2. Insure that the State Forest Service mapping services are integrated into this process.
3. Identify and recommend the best data for natural resources, particularly data on surface water in the state.
4. Provide information on tracking or animal surveillance in the event of animal disease spread.

E. Department of Public Health and Environment

1. Maintain a database of all public health related facilities, with special emphasis on hospitals, long-term care and special needs facilities along with their current patient populations, and provide this data to the MACC.
2. Be prepared to assume backup GIS operations, if the DOLA GIS section becomes inoperable for longer than one hour.
3. Be the conduit of information between the Centers for Disease Control and Prevention and the DOLA GIS Team.
4. Communicate status of hospitals, their capacity for receiving injured and current patient and staff population.
5. Provide information on disease trends or other spatial patterns related to public health issues.
6. Provide data on water supply systems and locations of potable water intakes.
7. Provide information on locations or areas undergoing surveillance or monitoring for disease or adverse environmental conditions.
8. Establish procedures for “real time” communication of spatial information with the MACC.
9. Provide the most current data on hazardous material facilities.

F. Department of Public Safety

1. Maintain a database of all law enforcement, fire service, hazardous material and emergency medical response agency facilities.
2. Provide information on stop orders, access and traffic restrictions and other state patrol operations during an incident.

3. Work with DOLA in geo-referencing critical infrastructure locations.

G. Department of State

1. Maintain a database of primary and alternate polling locations or assist DOLA to maintain this database.
2. Provide business location information for business critical to emergency response.

H. Department of Transportation

1. May be called upon to use its equipment, which are equipped with Global Positioning systems, to assist in pinpointing incident associated locations.
2. Provide current information on the following:
 - a. Roads/highways with relevant flow capacity information
 - b. Bridges and tunnels with information reflecting possible impedance to traffic flow such as tunnel clearances, bridge width and weight limitations.
3. Provide information on locations CDOT activities during an incident such as deployment of resources for traffic/access control, incident recovery and other activities
4. Provide information to the MACC on road status and current traffic conditions. This information should come directly from systems in place at the Department's traffic operations center.

I. Department of Human Services

Provide information on day care centers and their populations to be geocoded for emergency planning..

J. Department of Purchasing and Administration

Provide information on state owned and leased buildings to be geocoded for emergency planning.

V. RESOURCE REQUIREMENTS

- A. GIS hardware and software residing at the MACC.
- B. GIS viewer application loaded at the MACC.
- C. GIS hardware and software at state agencies.

D. Base data and/or services for analysis and “geocoding.”